

WHAT IS CLAIMED IS:

1. A structure for a magnetic read head, comprising:
 - at least one read sensor;
 - at least a first lead layer juxtaposed with the sensor, the first lead layer having a first polish resistance; and
 - at least a second lead layer juxtaposed with the first lead layer and having a second polish resistance less than the first polish resistance.
2. The structure of Claim 1, wherein the first lead layer is electrically connected at least to the sensor and the second lead layer is electrically connected at least to the first lead layer.
3. The structure of Claim 1, wherein the first lead layer includes Rhodium (Rh) and the second lead layer includes Tantalum (Ta).
4. The structure of Claim 1, wherein the first and second lead layers include materials chosen from the following respective combinations: Tantalum (Ta)/Tungsten (W), Tantalum (Ta)/Copper (Cu), Gold (Au)/Copper (Cu), and Rhodium (Rh)/Aluminum (Al).
5. The structure of Claim 1, wherein the first lead layer defines a thickness and the sensor defines a thickness substantially equal to the thickness of the first lead layer.

6. The structure of Claim 1, wherein the second lead layer is recessed away from the sensor relative to the first lead layer.

7. The structure of Claim 1, comprising at least one hard bias magnet layer under the first lead layer opposite the second lead layer.

5 8. The structure of Claim 1, comprising at least one upper protective layer covering the second lead layer opposite the first lead layer.

9. A method for making a read head, comprising:
establishing a sensor on a substrate;
establishing a first lead layer having a first polish characteristic next to the
10 sensor;
establishing a second lead layer having a second polish characteristic next to
the first layer; and
polishing the layers such that the second lead layer is recessed away from the
sensor and the first lead layer is not.

15 10. The method of Claim 9, further comprising:

using a chemical mechanical polish (CMP) during the polishing act.

11. The method of Claim 9, further comprising:

depositing a hard bias magnet layer next to the sensor prior to establishing the first lead layer.

12. The method of Claim 9, further comprising:

5 depositing a protective layer on the second lead layer prior to the polishing act.

13. A magnetic read head comprising:

at least one sensing structure supported by a substrate;

at least one hard bias magnet layer juxtaposed with the sensing structure;

10 at least one controller receiving signals from the sensing structure representative of data stored on a magnetic disk closely spaced from the sensing structure; and

a lead structure connecting the sensing structure to the controller, the lead structure including:

15 at least a first lead layer juxtaposed with the sensing structure, the first

lead layer having a relatively low removal rate; and

at least a second lead layer juxtaposed with the first lead layer and having a relatively high removal rate.

14. The magnetic read head of Claim 13, wherein the first lead layer is electrically connected at least to the sensing structure and the second lead layer is electrically connected at least to the first lead layer.

15. The magnetic read head of Claim 13, wherein the first and second lead layers include materials chosen from the following respective combinations: Tantalum (Ta)/Tungsten (W), Tantalum (Ta)/Copper (Cu), Gold (Au)/Copper (Cu), and Rhodium (Rh)/Aluminum (Al).

16. The magnetic read head of Claim 13, wherein the first lead layer includes Rhodium (Rh) and the second lead layer includes Tantalum (Ta).

17. The magnetic read head of Claim 13, wherein the first lead layer defines a thickness and the sensing structure defines a thickness substantially equal to the thickness of the first lead layer.

18. The magnetic read head of Claim 13, wherein the second lead layer is recessed away from the sensing structure relative to the first lead layer.

19. The magnetic read head of Claim 13, comprising at least one hard bias magnet layer under the first lead layer opposite the second lead layer.

20. The magnetic read head of Claim 13, comprising at least one upper protective layer covering the second lead layer opposite the first lead layer.